SEAGUARDII DCP Doppler Current Profiler

The SeaGuardII DCP features innovative development of the acoustic profiling capacity and an exceptional ability to collect high quality current information even on moving and tilting moorings. Available as a self recording instrument, it also integrates unique real time features to meet each application needs. The SeaGuardII is a smart data hub that combines the SeaGuard electronics with the advanced management firmware of Aanderaa SmartGuard data hub. SeaGuardII DCP is a 600kHz profiler with multi-sensor capability. By design, it offers increased deployment time, optimized configuration flexibility and unique features to cope with demanding upper ocean environments.

It is available as 300m depth rated, 3000m, 4500m or 6000m. Optional parameters are available using Aanderaa range of smart sensors that include temperature, pressure, conductivity, oxygen, wave, tide and turbidity. In addition the SeaGuardII has 4 analog inputs, 2 serial ports with power control and direct connection for real time data transmission.

Applications:
- Buoy mounted
- Hyd/Met systems
- In mooring line with upside down possibility
- SeaGuardII DCP Dual Head (Two DCPS connected)
- Ocean observatory with sensors string
- Bottom mounted
- Multiparameter ocean observations

Unique expendable platform
Easy connection of additional sensors
- Wide range of additional parameters available; wave, tide, temperature, conductivity, pressure, oxygen and turbidity, and integration from third party: ORP, pH, total algae, etc

Can easily be extended to an effective ocean observatory.
- Double the measuring range using two DCPS transducer heads connected to one instrument
- Measure in the blanking zone or boundary layer by combining with a single point Doppler Current Sensor
- LED indicator; visual confirmation of the status of the instrument

Exceptional compensation for environment interference
- Tilt compensation of each ping to correct data for dynamic movements
- Advanced tilt compensation algorithm with cell position adjustment; achieve true horizontal current measurements

Optimal flexibility
- User selectable broadband or narrowband modes
- Address different applications scenarios using a single instrument; set up to three configurations simultaneously
- Surface current feature; measure in the top centimeters layer
- Surface referred columns; follow water level changes

Increased deployment time
- 24 months deployment at 30min sampling interval
- Reduced power consumption with broadband technology
- Increased internal battery capacity
- Optional user assembled battery

Smart Data quality control
- Increased data quality control
- Automatic flagging of bad data; status report for each cell
- User selectable advanced autobeam algorithm; automatic selection of the best 3-beams combination to remove faulty cells

Enhanced real time functionality
- Modem support with power control
- Support AIS, GOES, pseudo binary formats
- Flexible configuration allows optimal limitation of transmitted data
- Independent configuration of the recording and transmission intervals
- Automatic retransmission of missing data

User friendly set up and data analyzing
- Predeployment configuration software; RT Collector
- Modern post processing software Data Studio 3D
- Geoview web based display for real time application
Specifications

Velocity profile measurement

Acoustic frequency: 600 kHz
Typical profiling range: Broadband: 30-70m
            Narrowband: 35-80m
Cell size: 0.5m - 5m
Cell overlap: 0-90%
Velocity range: Narrowband: 0-500 cm/s -
            (1000cm/s with max tilt ± 5°)
            Broadband: 0-400cm/s
Velocity accuracy: 0.3cm/s or ±1% of reading
Velocity resolution: 0.1cm/s
Velocity precision: <3,3cm
Ping rate: Up to 10Hz (config dependent)
Cell positioning: Static (instrument referred)
Multiple columns: 3 simultaneous columns +
Surface cell
Max. number of cells: 150 total, 75 for first column,
            50 for second and 25 for third
Blanking zone: 1m

Transducers
Number of beams: 4
Beam angle: 25°
Beam width: 2.5°

Echo intensity
Dynamic range: > 50dB
Resolution: < 0.01dB
Precision: < 0.01dB

Tilt and compass
Type: Internal solid state
Pitch / roll range: ± 90°(RMS) ± 1.5°
Tilt accuracy: <2°(RMS), ± 3.5°
Tilt / Heading resolution: < 0.1°

Embedded temp sensor 4080 (optional, on request)
Range -4 - +40°C
Resolution: 0.001°C
Accuracy ± 0.05°C
Response Time (63%): <5 sec

Communication and recording
Data storage: 2GB SD Card /remote download
Remote operation: Device layout
Configuration: Recording start/stop
Available telemetry: Cable, radio modem, GPRS,
                   GOES, Iridium
Configuration and real time data software: Real Time Collector
Configuration interface: USB / RS232 / RS422
Recording system: Multiple sensors groups with individual recording interval.
Recording interval: From 30 sec to 3 hrs

Power options
External power supply: 12.30V
Internal battery: 2 batteries inside the instrument:
                   Alkaline 3988: 9V, 15Ah
                   Lithium 3908: 7V, 35Ah
Current drain example: 4,2mA

Environmental
Depth rating: 300m, 3000m, 4500m, 6000m
Operating temperature: -5 to +40°C
Dimensions: D: 160mm H: 585mm

Weight: In Air: In Water
SW: 10.8 kg 3.6kg
IW: 14.3 kg 6.6kg
DW: 15kg 7.2kg

Materials: PET, PUR, Titanium, Stainless steel
           316, polyurethane

OPTIONAL SENSORS
Temperature Sensor 4060
Range: -4-36°C (32-96.8°F)
Resolution: ±0.01°C (0.018°F)
Accuracy: ±0.03°C (0.05°F)
Response Time 63%: < 2 sec

Conductivity Sensor 4319
Range: 0-7.5 S/m
Resolution: 0.0002 S/m
Accuracy: ±0.05% (0.005mS/m)
Resolution: < 0.01% (0.0001 S/m)

Wave and Tide Sensor 5217/5218
Range: Several range available to 60MPa
Resolution: <0.0001% FSO
Accuracy: ±0.02% FSO standard
Resolution: ±0.01% FSO on request for sensors
Accuracy: 0-10MPa

Wave: Sampling rate: 2Hz, 4Hz
Samples: 256, 512, 1024, 2048

Turbidity Sensor 4112: 0-5V Analog Output
4 models: 0-25, 0-125, 0-500, 0-2000FTU

Oxygen Optode 4835/4330
O₂-Concentration Air Saturation
Measurement Range: 0-500 μM 0 -150%
Resolution: < 1 μM 0.4 %
Accuracy: <8 μM or 5%<5 % whichever is greater
With multipoint calibration: <±2 μM or ±1.5%
Response Time (63%): 4330F (fast response foil) <8 sec
4835/4330 (standard foil) <25 sec

Analog and serial inputs:
Analog: 4 channels 0-5V
Serial: 2 channels with sensor and power
switching one RS232 port and one RS422

Specifications subject to change without prior notice.